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Conceptual Modeling of Business Networks and Business Strategies

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Abstract

The sophistication of technical and organizational networking enables not only a broader range of business networks and business strategies, but also allows for their faster adaptation to innovations. By increasing the degree of formalization of strategy modeling, model consistency can be enhanced and specifications can be reused in subsequent business engineering phases like process (re-)design and information systems development. Modeling techniques for business network specification and business strategy specification are outlined and notations are presented. Experience from applying these techniques in financial service companies is summarized.

1. Introduction

Many industries are subject to a rapid and massive transformation. Electronic channels, sophistication of business networking and deregulation led not only to more flexibility in sourcing and bundling of service components, but also allow for new forms of disintermediation and re-intermediation. As a consequence, the beginning of a large-scale shift can be observed: Large, monolithic organizations which cover a broad range of services, distribution channels, and customer segments transform into networked organizations which are focused either on a specific production process or on a specific customer process. In general, value networks allow for a greater variety of strategies and business models (Weill and Vitale, 2001). Moreover, strategies and business models have to be adapted more frequently due to increased market dynamics and due to changes induced by accelerating technical innovations.

“Today, business model and strategy are among the most sloppily used terms in business; they are often stretched to mean everything – and end up meaning nothing.” (Magretta 2002) Strategies as well as business models are usually developed informally and documented as well as communicated mostly by means of natural language. If both the range of strategies and business models is extended and the speed of their alteration is

increased, the missing formalism of their development methodology as well as the current means of documentation and communication become increasingly problematic.

Business Engineering as a discipline is aimed to provide methods and models which support all phases and aspects of collaboratively constructing men-machine systems in business. Methods and models cover business strategy development, business process development and information systems development (Österle 1995, Österle and Winter 2000). Like business process (re)design is supported by appropriate conceptual process models and information systems development is supported by appropriate conceptual data models and functional models, strategy development can be significantly improved if business models and business strategies are developed, maintained, documented and communicated using appropriate conceptual models.

In academia and much more in companies, the utilization of the term ‘model’ in conjunction with conceptual modeling is often ambiguous: ‘Model’ is used to designate a modeling technique or modeling rules (e.g. entity relationship model), but is also used to designate the result of the modeling process (e.g. business model). From a database oriented perspective on conceptual modeling, we should designate the modeling technique as ‘model’ and the resulting specification as ‘schema’. Since the term ‘business model’ is widely used in academia as well as in companies or by consultants to designate a result of the strategy making process, we maintain this term. As a consequence, we designate the modeling rules as ‘technique’. A technique is characterized by a set of rules governing the modeling process and by an underlying conceptual information model. Techniques are associated with certain notations for representing their results (Brinkkemper et al. 1996).

This paper documents research that was done together with several large service companies to address the need for formalized techniques that support strategic planning processes within a business engineering context. Specifically, design principles and techniques for conceptual modeling of business networks (Section 2) and business strategies (Section 3) are proposed. The application of the proposed techniques in a strategic planning process of a retail bank is summarized in Section 4. This case is also used to present industry specific scales for the business strategy model dimensions. A short summary concludes the paper in Section 5.

2. Business Network Modeling

A sophisticated technical networking infrastructure together with an organizational business networking infrastructure allow to broaden the transformation scope from isolated companies or business units towards entire value networks. This effect is considered to be the most important business potential of recent information technology innovations (Österle 1999). Enabling ‘technologies’ for networked business architectures include cheap, high-bandwidth communication networks, business oriented communication standards (e.g. ebXML CPA/CPP), software packages that support the management of inter-company business processes (e.g. SAP APO), electronic markets, and successful business networking practices.

Parallel to advances in business networking, internet literacy and internet access have become available to a growing portion of end consumers. By communicating directly with service providers via electronic channels, end consumers can be integrated into value networks more closely, and service design can be influenced more directly. Particularly for services based on products bound to electronic media (e.g. software, information,

music, movies) and for financial services, offerings can be customized to specific needs of customer segments.

As a consequence, companies can focus on a production (or resource utilization) oriented competency or on a customer process oriented competency and team up with partners that bring in complementary competencies instead of having to implement both competencies in one monolithic business model. The value network is then composed of production-oriented components and customer process-oriented components. Due to the similarity of the composition of a value network to the composition of a traditional, monolithic business model, traditional business process types can serve as templates for value network component types:

- Procurement and distribution processes integrate products and services according to customer needs. Together with customer relationship management, these processes support the customer side of a traditional business model and therefore become the foundation of a ‘customer intimacy’ business model type in a value network.
- Transaction processing processes (e.g. production lines for consumer products, processing of financial products) organize efficient production of services in large numbers, thereby becoming the foundation of a ‘factory’ business model type in value networks.
- Product development and certain management processes (e.g. risk management) are examples for processes for which cost efficiency is not the most important success factor. Such processes become the foundation of a ‘specialist’ business model type in a value network.

While the various processes are traditionally linked together by a company-specific communications and integration infrastructure, value networks require an open ‘business collaboration infrastructure’ (BCI) to flexibly support collaborations of the participating companies / business units. The relationship between value network component types and a generic process map for financial service institutions is illustrated by Figure 1. According to Österle and Winter (2000), ‘customer intimacy’ type business strategies are designated as ‘service integrators’, ‘factory’ type business strategies are designated as ‘shared service providers’, and ‘specialist’ type business strategies are designated as ‘exclusive service providers’ in a value network.

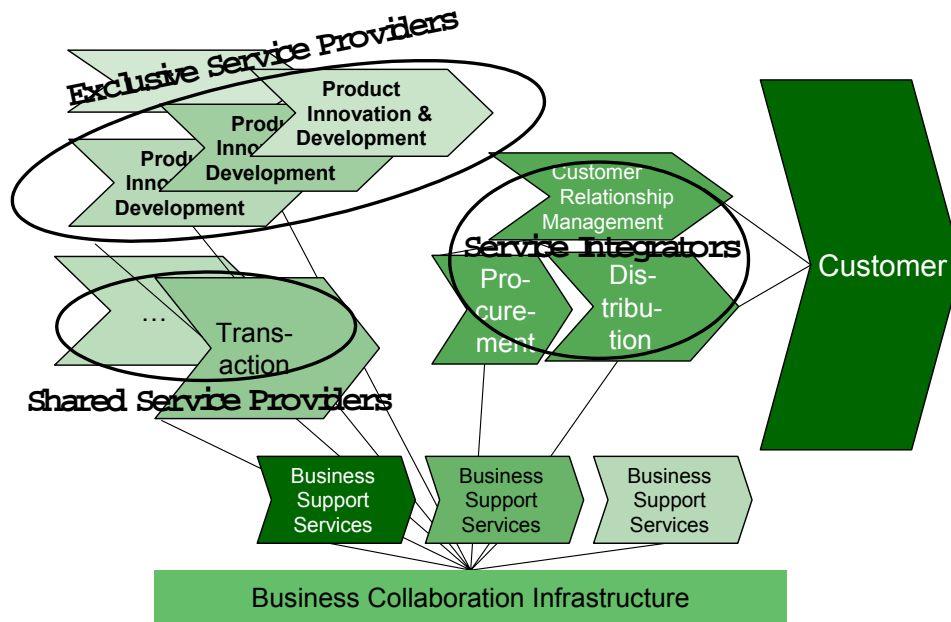


Figure 1: Relationship of Value Network Component Types and Traditional Business Process Types

Customer processes become the focus of the overall value network design. *Service integrators* aggregate standardized product and / or service components in order to create solutions that are tailored to a specific, holistic customer process (e.g. buying a home) or a specific life event (e.g. retirement, marriage, moving to a new community). In most cases, information components become a more important solution component than in traditional products. The most important success factors for service integrators are flexibility (implemented e.g. by personalization capabilities) and customer intimacy (implemented e.g. by customer knowledge management). Examples for service integrators are autobytel.com, yourhome.ch or thirdage.com.

Shared service providers produce large amounts of standardized products / services that can be reused by many service aggregators and / or other service providers in subsequent stages of the value network. It is most important for shared service providers to exploit economies of scale and to support an efficient interface to as many other nodes in the value network as possible. Examples for shared service providers are IT insourcers or transaction banks.

In contrast to standardized, cheap product / service components that are reused in many solutions, some product / service components may be produced exclusively to create a unique selling proposition or by exploiting a specific competency or resource. As a consequence, such *exclusive service providers* may maintain direct, one-to-one networking links to their customers (service integrators or other service providers) instead of maintaining an adapter to the BCI. Examples for exclusive service providers are engineering companies for product development or funds management companies and risk management units in financial services.

A BCI is needed to support the open and flexible exchange of services and information necessary to run value networks. The services component of the BCI comprises standardized, cross-industry business support services like payments services, risk trading, payroll processing, business directories, and network operations (just to name a few). These services are complemented by communications standards not only on the software level (e.g. SOAP, UDDI) and on the application level (e.g. ebXML compliant

industry standards), but also on the process level (e.g. ebXML process standards) and particularly on the business level (e.g. contracting standards, service level agreement templates, ebXML CPA/CPP).

The four levels on which communications standards are defined (business, process, applications, software) are also used to describe the roles that participate in the value network. On all levels, businesses are linked either directly (e.g. exclusive service providers to service integrators, service integrators to end consumers) or using the BCI. In Figure 2, a generic business network model is illustrated. By replacing generic roles with actual businesses, this generic network model can be used to specify a concrete value network.

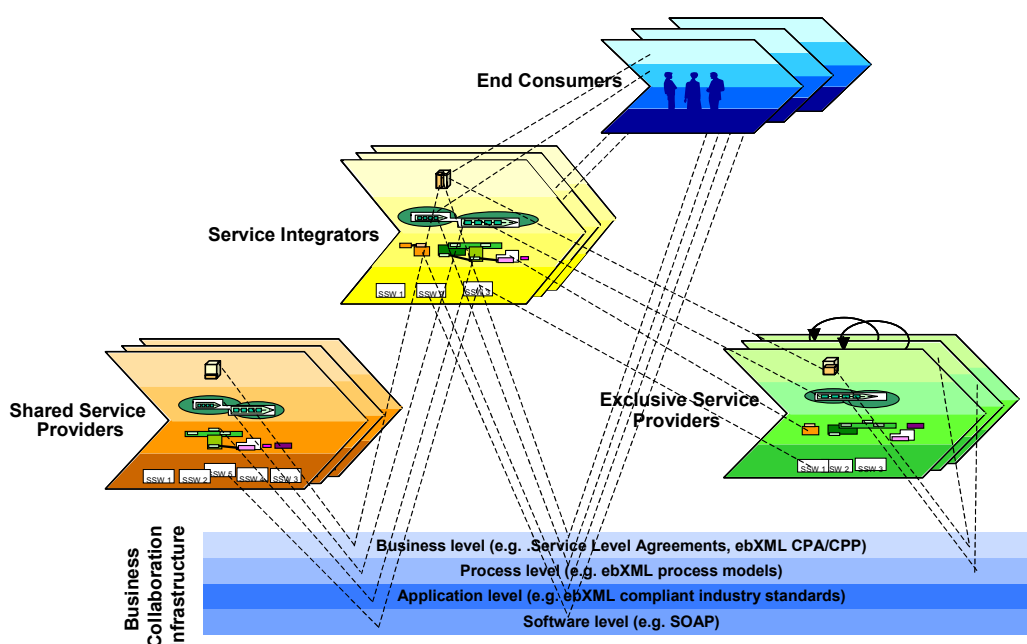


Figure 2: Generic Business Network Model (based on Leist and Winter 2000)

3. Business Strategy Modeling

In contrast to a business model which specifies “how a firm relates to external stakeholders and how it transacts with them”, a business strategy can be interpreted as a “pattern of actions or decisions (planned or emerging) that explain how a firm achieves and maintains competitive advantage” (Zott and Amit 2003). The differences between the more general concept ‘strategy’ and the more specific concept ‘business model’ are summarized by table 1.

In order to explain how a company or business unit achieves and maintains competitive advantage, all relevant long-term, stable properties of that entity have to be specified. The entity should be able to influence these properties at least indirectly.

A short discussion of explicit business model proposals as well as more general approaches to strategic planning is used to identify relevant dimensions for a conceptual business strategy model. The identified specifications are then presented as components of an external view and an internal view of the business strategy model, respectively.

Alternative notations for the proposed business strategy model are proposed in a fourth subsection. The conceptual discussion as well as the notations are mostly based on (Heinrich and Winter 2002).

Table 1: ‘Business Strategy’ vs. ‘Business Model’ (Zotta and Amit 2003)

	Business Strategy	Business Model
Main Questions Addressed	<p>How to position firm against rivals?</p> <ul style="list-style-type: none"> • What businesses to be in, i.e., what products or services to offer? • What customer segments to target? • What resources and capabilities (e.g. technologies) to use? • When to enter the market, and how to enter it? • How to compete, i.e. what kind of product market positioning approach to adopt (cost leadership and/or differentiation)? 	<p>How to do business?</p> <ul style="list-style-type: none"> • Who are the parties that can be brought together to exploit a business opportunity, and how can they be linked to the focal firm to enable transactions? • What information or goods are exchanged among the parties, and what resources and capabilities are needed to enable the exchanges? • How are the transactions between the parties controlled, and what are the incentives for the parties?
Focus	Internally/externally oriented: focus on firm’s activities and actions in light of competition	Externally oriented: focus on firm’s transactions with others
Value Logic	Value appropriation logic: creating and preserving a competitive advantage, capturing more value than rivals	Value creation logic: enhancing total value created (i.e. value created for all business model participants) by exploiting business opportunities
Performance Measure(s)	Value captured by firm (e.g. measured by RoA, RoS, Tobin’s q, market value of firm, market value of equity)	Total value created

3.1 Related Work and Conceptual Foundations

Schwaningers (1989) ‘business system’ comprises dimensions and relationships intended to support the identification of business units. Customer problems / requirements, problem solution technologies, products, distribution channels and customer segments are arranged in a circle which allows to represent not only these dimensions, but also binary relationships between them. For every dimension, a scale is proposed that represents the most important potential properties. This approach covers many important aspects of strategy modeling. In contrast to our definition, dimensions are included that cannot be significantly influenced by the respective company / business unit (e.g. competition).

As a component of IBM’s ‘Enterprise Solutions Structure’ project that aims at a comprehensive architecture for business, processes, and information systems, McDavid (1999) proposed ‘business concepts’ to specify the most important constituents of business systems. In this approach, relationships between business concepts represent dependencies. These relationships are then grouped in order to identify business patterns. Although the process of identifying business concepts and their relationships is not documented in detail and the analysis is rather generic (i.e. the model is not directly applied to actual cases), relationship analysis is instrumental in analyzing dependencies among business strategy model dimensions.

Another widely diffused approach is Timmers' (1998, 2000) 'business models' that were proposed to conceptualize business practices in (mainly B2B) electronic markets. Timmers defines business model as 'an architecture for the product, service and information flows, including a description of the various business actors, their roles, the potential benefits and the sources of revenues' (Timmers 2000). The primary focus is on market view and economic foundation of business activities. Business models are understood as building blocks of value networks. Based on 'interaction patterns' and simulated intermediation as well as disintermediation, the analysis of value networks is intended to identify novel business models. A resulting typology of eleven types of business models is described verbally but does not in all cases cover all aspects of the proposed business model structure. In contrast to our definition, market and valuation properties that cannot be directly influenced and that are closely interlinked dominate the business model. Moreover, Timmers' approach is only partially formalized.

In summary, these approaches to business strategy specification provide important features like specification dimensions or dependencies between specifications. None of these approaches, however, covers potentials, resources, and markets at the same time and is sufficiently formalized to support a systematic modeling process (Heinrich 2000).

Approaches to strategic planning should provide a foundation for specifying business strategies systematically. Approaches following the 'market based view' call for business strategy to primarily focus on markets and in particular sales markets. Design parameters therefore are based on a structured specification of relevant markets or an industry sector (as defined by related or similar products and / or service). In order to create structures for markets or industry sectors, dimensions like product groups, customer segments, distribution channels or geography are proposed. Porters (1998) value chain approach proves the significance of business networking for realizing competitive advantages and its interrelationship with a company's internal organizational structure. Early 'market based view' approaches in Germany (e.g. Meffert 1985) assign a pivotal role in strategy making to marketing planning. Hence constituents of marketing planning like products / services, contracting, communication, sales support and distribution have to be considered in the business strategy model.

An alternative approach suggests that business strategy should focus on internal resources and potentials. The reason for such a 'resource based view' is that, since specific company potentials are not considered enough in the market based view, the resulting strategy is nearly arbitrary and could be imitated quite easily. In contrast, specific resources and potentials reflect the individual company's ability to compete much better. Resources and potentials are developed in a core competency oriented process. Core competencies are long-term capabilities that cannot be transferred and imitated easily, cannot be substituted short-term and are complex in creation as well as in application (Hamel and Prahalad 1990, 1994). As a consequence, specific resources and core competencies should be included in the business strategy model.

The 'value based view' can be considered as a third approach to strategic planning. Initially based on Rappaports (1986, 1990) shareholder value concept, value creation is considered the primary goal of business activity. The value based view can be understood as a combination of the market based view and the resource based view, being complemented by rigid quantification and evaluation mechanisms that are oriented on value creation (Gomez 1993). A business strategy model should represent - and not evaluate - properties that allow for a classification, analysis, and comparison of business strategies (Heinrich and Winter 2002). Hence the quantification and evaluation mechanisms of the value based view are not incorporated into our approach.

3.2 External View of a Business Strategy Model

The external view of a business strategy model corresponds to the ‘market based view’ of strategic planning, focusing on the ‘selling’ side of a company or business unit. If modeled as a system, constituents of the selling side can be derived by asking which customer processes and segments are supported at which locations / regions by which products and services at which prices, which distribution channels are used, which time frames are relevant, etc. The following compilation is summarized from (Heinrich and Winter, 2002).

The **regional** dimension represents the spatial properties of markets. It ranges from very ‘local’ (e.g. sales areas for insurance brokers) to countries, currency or language regions and world areas (e.g. EMEA or Americas) to worldwide (e.g. global customers).

The **validity & subject** dimensions represent the point in time (or time period where the business model is considered to stay unchanged) where the business had, has or will have the properties specified by the business model and the entity (business unit or company) which it represents, respectively.

Customers are the most important party in the value creation network. Relations to customers comprise product / service transfers, funds transfers and information flows. These relations can be differentiated into ‘what’-type relations (products / services, contracting, communications) and a ‘how’-type relation (distribution) (Meffert 1998).

Product / service transfers relate customers to ‘core’ **products / services**. In contrast to elementary products / services, ‘core’ products / services are derived from the analysis of customer processes (e.g. buying a home, managing financial assets) and should support such processes significantly. In addition to quality requirements for elementary products / services, success factors for core products / services address the degree to which complex customer processes are supported.

An important aspect of the business strategy model that relates core products / services to customer segments is **brand design**. Branding is intended to create a distinctive, unique perception in the market. It is related to products and services (Weber 1992), but also can be related to the organization as a whole (Halstenberg 1996). Other constituents of the marketing strategy that relate to both core products / services and to customer segments are communications policy and pricing policy (Becker 1998). For all three relationship types, it is essential to identify generic types in order to create a usable scale for the respective business strategy model dimensions.

Interactions between a business unit and its customers are determined primarily by **sales channels** and **customer services** (Berndt 1995). Sales channels are used for the transfer of products / services, funds and information, thereby representing different forms of interaction between business units and customers (Kreuzer 1998). Customer service design does not only assign sales channels to products / services, contact channels, and customer segments. In addition, quality criteria and success factors for this assignment are specified.

With regard to **communications policy**, unidirectional and bi-directional communication are differentiated (Berndt 1995). Unidirectional communication comprises all activities intended to increase the general propensity of anonymous customers or prospects to do business with the organization (e.g. public relations, advertising). In contrast, bi-directional communication is directed at individual customers (although not necessarily having to be performed individually) and aims to trigger specific sales activities (e.g. direct marketing). While unidirectional communication can be represented similar to brand design (i.e. relating core products / services to customer segments), bi-directional communication should relate specific products / services to specific sales channels.

3.3 *Internal View of a Business Strategy Model*

In contrast to specifications of the external business strategy model view that reflect ‘outside-in’ thinking, the internal business strategy model view represents sources, characteristics and effects of capabilities. It corresponds to the ‘resource based view’ of strategic planning, focusing on the ‘production’ side of a company or business unit. If modeled as a system, constituents of the production side can be derived by asking which competencies are exploited to team up with which partners in which way.

The two central concepts of the internal view are competencies and the value chain. While competencies can be specified by **relevant resources** and **relevant impacts**, the value chain can be specified by the **degree of integration of partners**, the **degree of coordination of (sales) channels** and the **degree of (spatial) decentralization** (Heinrich and Winter, 2002).

We do not represent specific value-creating activities because this would either impede the easy communication of business strategy models (if activities were modeled in too much detail) or be too superficial (if activities were modeled too abstract). It is not possible to identify one ‘right’ level of detail for modeling activities when taking into account the multitude of applications and users of a business strategy model.

In addition to competencies and value chain, **organizational structure** and, relating it to competencies, **corporate culture** are considered to be important dimensions of the business strategy model that have to be included in the internal view. Similar to brand design or communication policy, for all three relationship types, it is essential to identify generic types in order to create a usable scale for the respective business strategy model dimensions.

3.4 *Graphical Representation of the Business Strategy Model*

If combined and complemented by appropriate scales, the dimensions identified as relevant in the preceding two subsections can be interpreted as a meta model for business strategy modeling. Based on Heinrichs (2000) initial work, Heinrich and Winter (2002) present rules that support strategy makers in assigning appropriate values for all dimensions, integrity constraints that guide the analysis process and avoid inconsistent business strategies, and alternative notations for documenting and communicating business strategies. To support strategy makers in working with such models, typical values of the proposed modeling dimensions should be provided. In our experience, the definition of appropriate scales is dependent from the industry sector. E.g., the dimension ‘core products / services’ would comprise values like ‘financing’, ‘invest & save’, ‘value transfer’, ‘retirement’, ‘insurance’, ‘law & tax services’ and ‘other services’ in (retail) financial services, while different values would be needed not only in completely different sectors like mechanical engineering, but even in related sectors like private banking.

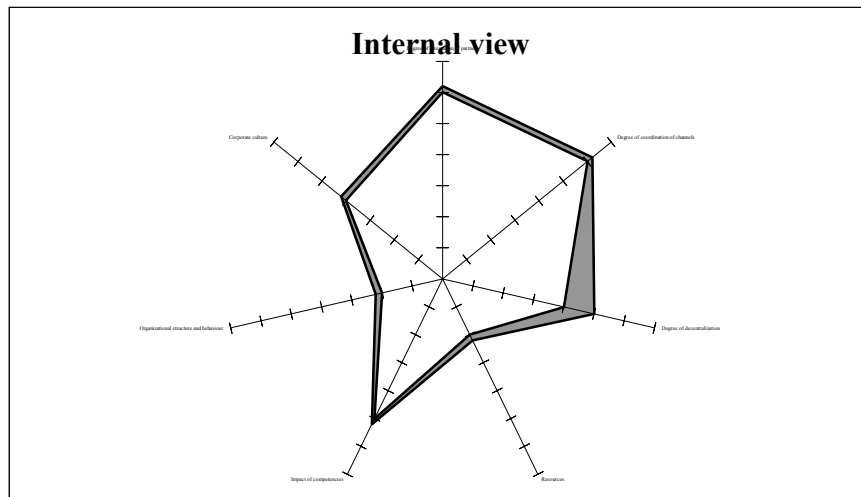


Figure 3: Cobweb Diagram of External View of The Business Strategy Model (Heinrich and Winter, 2002)

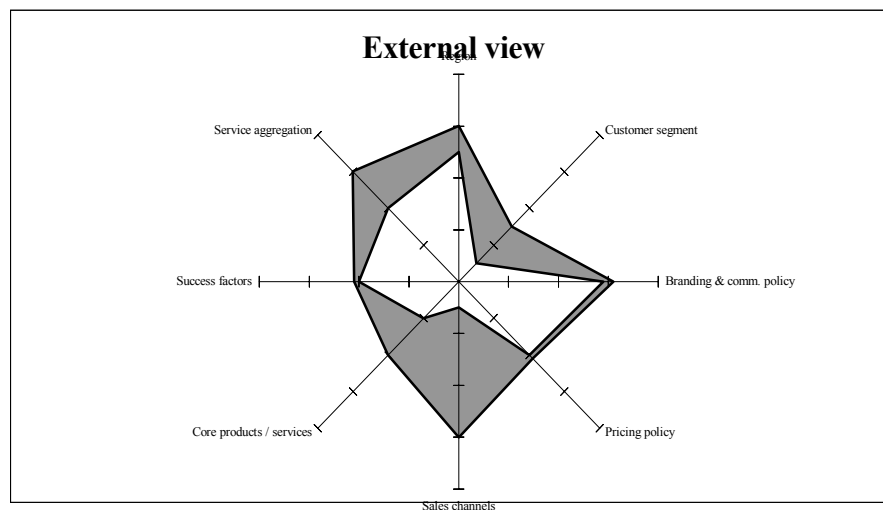


Figure 4: Cobweb Diagram of the Internal View of the Business Strategy Model

Business strategies that are specified by assigning values to more than three dimensions can be graphically represented as cobweb diagrams. Figures 3 and 4 are cobweb diagrams of a business strategy model's external view and internal view, respectively. These representations are created by selecting values (e.g. degree of coordination of channels) or ranges of values (e.g. sales channels) for all dimensions using industry specific scales - in this case scales for retail banking.

An alternative graphical representation of the proposed business model is illustrated in Figures 6 and 7. In this 'box-type' representation, business strategy model dimensions are arranged vertically while industry specific scales are arranged horizontally. The specification of a business strategy is achieved by marking appropriate values or value ranges. If the business strategy does only partially correspond to a particular value, the grade of compliance can be represented graphically by gray tones.

If different business strategies (e.g. as-is vs. to-be, business unit A vs. business unit B) are to be compared using the same graphical representation, the use of different colors (for cobweb diagrams) or fill patterns (for box diagrams) is recommended.

4. Application Experience

This Section summarizes the application of the proposed techniques in a strategic planning process of a large retail bank. The business strategy modeling subsection is based on the case study described in Heinrich and Winter (2002). All specifications have been elicited in workshops with senior executives. Other applications of the proposed techniques for business network specification and / or business strategy specification in retail banking are described in several articles in Leist and Winter's (2002) book.

4.1 Business Network 'Retail Banking'

The regarded retail bank understands itself as a service integrator. For different geographic regions and also for selected customer segments, business strategies are defined that differ with regard to sales channels, customer potentials and services offered. All service integrator units reuse as many shared services as possible, e.g. 'factories' for payments processing, custody services, leasing services and securities trading regardless of whether these services are offered within the corporate network or by external companies. Investment funds management, risk management and product development are among those services that are sourced exclusively from certain specialists. A common platform for business networking is used as widely as possible. Over this platform, support services like card processing or foreign exchange trading are sourced. A simplified version of the to-be business network is illustrated by Figure 5.

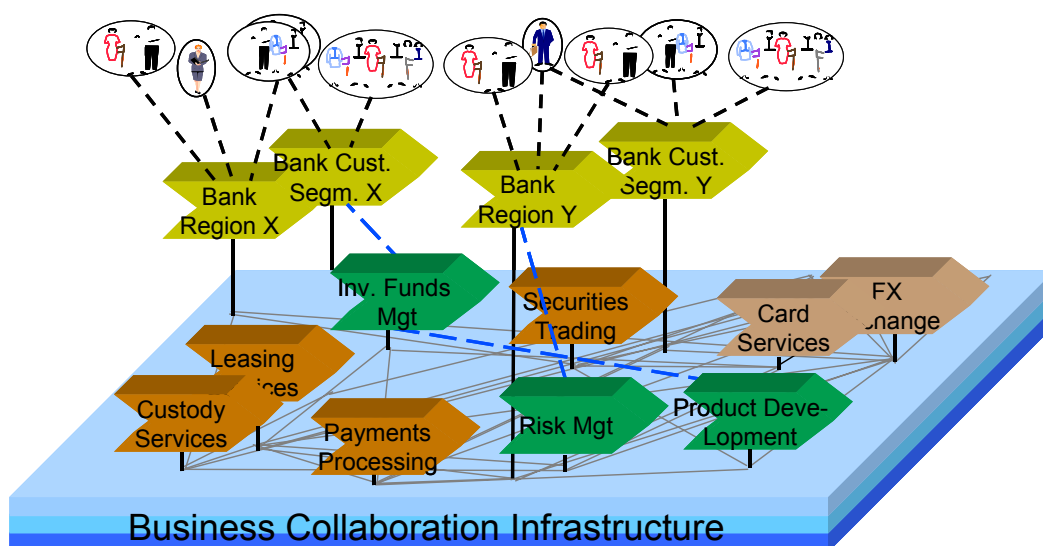


Figure 5: Business Architecture Model

4.2 Business Strategy 'Bank Region X'

With regard to **regional orientation**, countries are differentiated due to widely different legal banking regulations. The modeled business unit targets German customers (ANSI country code = DE).

With regard to customers, basic orientation, consumer behavior and customer potential are differentiated. According to Sinus (2000), **basic orientations** can be conservative, materialistic, hedonistic, post materialistic and post modern. **Consumer behavior** can be classified to be complex, dissonance reducing, habitual or event oriented (Assael 1987). **Customer potential** should be measured as average, future oriented lifetime value. The regarded bank focuses on a materialistic, dissonance reducing customer segment with medium potential.

According to Weber (1992), **brand design** of banks can be classified into traditional, convenience, exclusiveness, professional, community, discount and modern & innovative. The bank's **price policy** can be oriented on value, volume or number of transactions, on time, on performance or can focus on flat rates per service or even overall flat rates (Bernet 1995). The bank's brand stands mainly for convenience and its price policy focuses on value / volume of transactions.

According to Kreuzer (1998), **sales channels** in financial services can be stationary (i.e. bank component is bound to a location, no customer component), mobile (i.e. bank component is mobile, no customer component) or electronic (i.e. bank component and customer component are computer applications, location is irrelevant). **Success factors** for sales processes can be time, convenience, value added / cost efficiency, competence & quality, flexibility, or image. From an output perspective, the bank can offer complaint management, consulting, personal sales and information **services**. **Customer contacts** can take place primarily as self service (e-banking, ATMs, phone banking), as passive, semi personal contacts (e.g. customer care teams in branches), as passive, personal contacts (e.g. personal bankers in branches) or as active contacts (e.g. outbound call centers) (Kreuzer 1998). The regarded bank utilizes all sales channels with a focus on mobile. Convenience and image are regarded as primary sales success factors. All services are offered with a focus on personal sales and complaint management. Personal customer contacts are sought after actively although self-service and semi-personal contacts are also supported.

A retail bank's traditional **core products and services** are financing, investments & savings, value transfers, (financial) retirement planning, insurance, and law & tax services. **Success factors** for these products / services are time, standardization (compatibility to other products, comparability), range of products, price / costs, risk, performance, flexibility and image. The regarded bank offers all products except for insurance with a focus on investment / saving and financial retirement planning. These products are primarily designed to be compatible with complementing financial services from other service integrators.

Being the final dimension of the external business strategy model view, the **service combination** of elementary products and services can be driven by products, by product bundling, by customer problems or by customer events. In the regarded case, the primary focus is on product bundling while also some problem-oriented services are offered.

The business strategy specifications for all dimensions of the external view are illustrated by Figure 6.

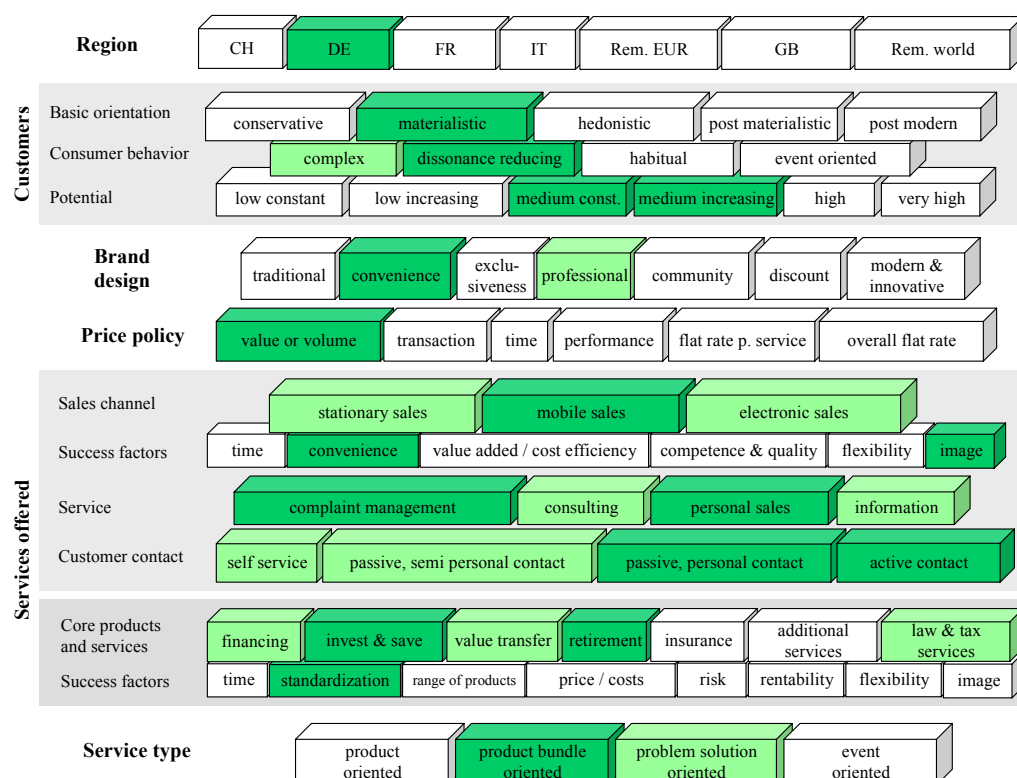


Figure 6: Alternative Representation of External View of Business Strategy Model

The value chain is described by the degree of integration of partners, the degree of integration of (sales) channels and the degree of decentralization. With regard to the **integration of partners** in the value-added network, several business networking arenas can be differentiated: Partners can be integrated in logistics, product development, procurement, operations, marketing & sales, support, and / or even management processes. Multi-channel management, i.e. the **integration of sales channels**, can be centered around customer segments, products (e.g. common procurement), processes & systems (e.g. common platform), marketing (e.g. common pricing), finance or combinations of these. Regarding the (spatial) **decentralization** of operations, the same decentralization arenas can be differentiated as for business networking. The regarded bank collaborates in all areas except for marketing & sales. Particularly product development, procurement, and operations are implemented in close collaboration with partners. A comprehensive multi-channel approach covering all aspects is followed. However, the largest extent of channel integration is reached for products and marketing. No activities are totally centralized. Among the decentralized activities, marketing & sales is considered to leave the highest autonomy to the business units.

Competencies can arise from employees, organizational capabilities (e.g. ‘economies of scale’), corporate culture & mentality (e.g. innovation culture), reputation, knowledge, technology, or capital and other production factors (Lado et al. 1992, Hamel 1994). Regarding their **impact**, it can be differentiated whether the focus is on management capabilities, synergies and change capabilities, transformation capabilities or output-oriented capabilities (Heinrich 2000). For the regarded bank, employees and reputation are considered to be the most important sources for transformation oriented and output oriented competencies.

With regard to organization, management policies, processes & structures, responsibilities and the range of activities are differentiated (Bleicher 1999). As basic

management policies, a high degree of control, situative control, general frameworks (e.g. management by objectives) or total autonomy can be implemented. **Processes & structures** can be highly formalized and standardized, problem oriented and flexible, or open and subject oriented. **Responsibilities** can be defined in a task oriented, distributed (e.g. team organization), synergy oriented or centralized way. The **range of activities** can be small or broad, and activities can cover many production stages, but also only a specific stage. The regarded bank claims to organize its processes problem oriented and flexibly and to manage by objectives. Responsibilities are task oriented, and job profiles usually cover a broad range of activities while focusing on specific production stages.

Corporate culture is difficult to classify. According to Bleicher (1999), openness and basic orientation are the most important criteria. Regarding **openness**, a primarily internally and externally oriented culture should be differentiated. It is important whether content (e.g. business problems) or norms are more important for employees. An organization's **basic orientation** is either more traditional (e.g. preserving values) or transformation oriented. Regarding the role of employees in the organization, more individuality oriented and more community oriented approaches can be observed. The regarded bank appears as a modern organization with external orientation, content orientation, transformation culture and individual focus.

The business strategy specifications for all dimensions of the internal view are illustrated by Figure 7.

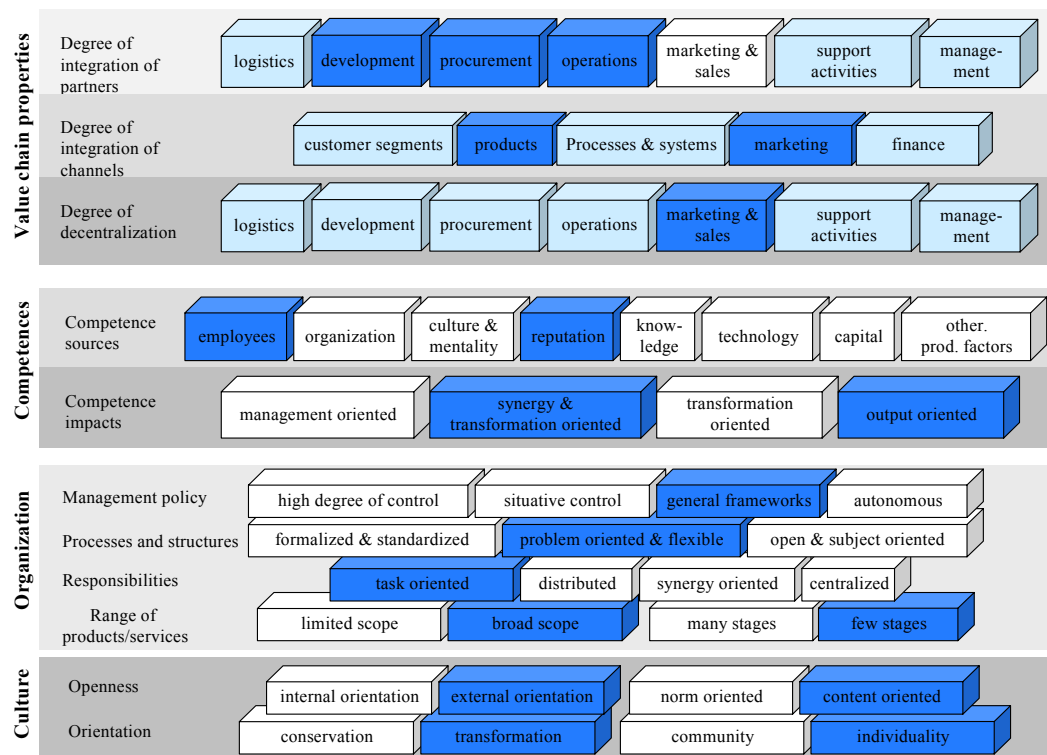


Figure 7: Alternative Representation of Internal View Of Business Strategy Model

4.3 Application Experience

The proposed techniques have been utilized in different ways:

1. **Documentation:** Using industry specific scales and specification rules, actual business network and business strategies have been modeled ‘as-is’.
2. **Envisioning:** Based on ‘as-is’ specifications, ‘to-be’ specifications have been derived by simulating the effects of technology innovations (e.g. mobile broadband access to banking services), business changes (e.g. targeting new customer segments or using new incentive plans), and / or cultural changes (e.g. opening the organization by selective business networking).
3. **Manipulation:** Business strategy comparison, aggregation and consolidation has taken place during competitive analyses (comparison of ‘as-is’ models), mergers & acquisitions (aggregation of ‘as-is’ models), or strategic planning (consolidation of ‘to-be’ models).

From a methodological perspective, these processes should be separated because the role of the business strategy model, the quality control and the project goals are different: The success of documentation projects as well as envisioning projects depends on the appropriateness of scales and the compliance with integrity constraints that guarantee that values of different scales are consistent (e.g. a focus on electronic sales channels and self-service is not consistent with a focus on conservative customers). Documentation projects and envisioning projects however differ with regard to the extent of applicable quality control because the latter are visions and not models of an existing, real phenomenon.

In contrast to documentation and envisioning usage, manipulation usage incorporates discussion, evaluations, and group decision making in order to develop several input business strategy models into a single output model or an aggregate evaluation. For this type of projects, the proposed techniques can only be regarded as a partial yet important methodological support.

5. Conclusions

We have presented an approach to formulized support of strategic planning that is based on a discussion of related work, widely diffused strategic planning paradigms and experience with strategic planning processes in several retail banks. By using the proposed techniques to specify business networks and business strategies,

- business strategies can be compared and classified: E.g., the strategic planning process can be documented by a series of business strategy models that differ in time reference, technology focus, transformation focus, etc.
- business strategies can be standardized: E.g., reference business networks and reference business strategies for specific industries can be used as a foundation for individual adaptation.
- business strategies can be checked for completeness and integrity: The proposed dimensions specify the market-based view of the firm as well as the resource-based view. Integrity constraints can be used to avoid value assignments that are incompatible.

- strategic planning can be linked to process (re-)design and information systems development: In actual applications, many specifications from the business strategy model have been reused in subsequent stages like customer process analysis, process vision, process output analysis and process dynamics modeling.

In summary, the proposed network and strategy modeling techniques proved instrumental in supporting the representation of 'as-is' business structures as well as the envisioning of 'to-be' business structures and their consolidation. Since application experience is limited to companies of one industry sector, however, it has to be shown whether the meta models are general enough to be applied to completely different industries. Furthermore, the scope of our research was limited to the 'service integrator' role in value networks so that the technique's applicability to other roles (e.g. shared service provider, exclusive service provider) is pending. A detailed, maybe formal analysis of interdependencies between specification dimensions and the integrity constraints resulting from these interdependencies is also pending.

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